

# Notice of Allowability

Application No.

10/608,238

Examiner

William H. Rodriguez

Applicant(s)

SAMMANN ET AL.

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## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/16/2005.
2. ☒ The allowed claim(s) is/are 1-14 and 16-28.
3. ☒ The drawings filed on 27 June 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

### DETAILED ACTION

This office action is in response to the amendment and remarks filed 5/16/05.

#### *Allowable Subject Matter*

Claims 1-14 and 16-28 are allowed in view of the amendment and remarks filed 5/16/05 and **the Terminal disclaimers filed 3/2/05.**

Claims 1-14, 16-24, 26 and 27 were indicated to be allowable in the previous office action.

With respect to claim 1, the following is an examiner's statement of reasons for allowance: the prior art of record neither discloses nor makes obvious the combination set forth in the independent claims, and especially does not show "the array being supported for continuous rotation relative to the case in a first direction about the axis to cyclically bring each conduit from a charging zone for receiving a charge from upstream to a discharging zone for downstream discharging of products of combustion of said charge, said rotation being driven by partially tangential direction of the products of combustion", in combination with the other claim limitations.

With respect to claim 11, the following is an examiner's statement of reasons for allowance: the prior art of record neither discloses nor makes obvious the combination set forth in the independent claims, and especially does not show "a pulsed combustion combustor receiving air from the compressor and outputting combustion gasses to the turbine and having: a plurality of combustion chamber conduits held for rotation about the axis through a plurality of positions, including: at least one charge receiving position for receiving a charge from upstream;

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at least one initiation position for initiating combustion of the charge; and at least one discharge position for downstream discharging of products of combustion of said charge”, in combination with the other claim limitations.

With respect to claim 14, the following is an examiner's statement of reasons for allowance: the prior art of record neither discloses nor makes obvious the combination set forth in the independent claims, and especially does not show a pulse combustion device comprising: “a combustor carousel supported by the support structure and rotating relative thereto about an axis and comprising: a plurality of combustion conduits in a circumferential array, each cyclically receiving a charge and discharging combustion products of the charge; and means for driving said rotation of the carousel by at least partially tangential direction of the combustion products”, in combination with the other claim limitations.

With respect to claim 24, the following is an examiner's statement of reasons for allowance: the prior art of record neither discloses nor makes obvious the combination set forth in the independent claims, and especially does not show “a circumferential array of combustion chamber conduits, the conduits being downstream of the compressor and upstream of the turbine, the array being supported on a free spool for continuous rotation relative to the case in a first direction about the axis to cyclically bring each conduit from a charging zone for receiving a charge from upstream to a discharging zone for downstream discharging of products of combustion of said charge”, in combination with the other claim limitations.

With respect to claim 25, the following is an examiner's statement of reasons for allowance: the prior art of record neither discloses nor makes obvious the combination set forth in the independent claims, and especially does not show “a circumferential array of combustion

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chamber conduits, the conduits being downstream of the compressor and upstream of the turbine, the array being supported for continuous rotation relative to the case in a first direction about the axis to cyclically bring each conduit from a charging zone for receiving a charge from upstream to a discharging zone for downstream discharging of products of combustion of said charge; means for starting the rotation; and means for maintaining the rotation including at least one of: a spool driven by said turbine; and direction of said products of combustion”, in combination with the other claim limitations.

With respect to claim 26, the following is an examiner's statement of reasons for allowance: the prior art of record neither discloses nor makes obvious the combination set forth in the independent claims, and especially does not show a pulse combustion device comprising: “a nonrotating manifold portion having: at least a first sector conveying air to an aligned transient first group of the combustion conduits; and at least a second sector blocking upstream ends of an aligned transient second group of the combustion conduits from upstream communication”, in combination with the other claim limitations.

With respect to claim 27, the following is an examiner's statement of reasons for allowance: the prior art of record neither discloses nor makes obvious the combination set forth in the independent claims, and especially does not show a turbofan engine comprising: “a circumferential array of combustion chamber conduits, the conduits being downstream of the compressor and upstream of the turbine, the array being supported for continuous rotation relative to the case in a first direction about the axis to cyclically bring each conduit from a charging zone for receiving a charge from upstream to a discharging zone for downstream discharging of products of combustion of said charge, wherein: a bypass airflow bypasses the

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compressor and turbine and a mass flow ratio of the bypass airflow to the core airflow is between 3:1 and 9:1", in combination with the other claim limitations.

With respect to claim 28, the following is an examiner's statement of reasons for allowance: the prior art of record neither discloses nor makes obvious the combination set forth in the independent claims, and especially does not show a pulse combustion device comprising; "a combustor carousel supported by the support structure and rotating relative thereto about an axis and comprising: a plurality of combustion conduits in a circumferential array, each cyclically receiving a charge and discharging combustion products of the charge, the combustion conduits having median cross-sectional areas between 12.9 square cm and 51.6 square cm; and means for maintaining the rotating of the combustor carousel by directing said combustion products", in combination with the other claim limitations.

The closest prior art reference to **Call (US 3,417,564)** neither discloses nor makes obvious the combination set forth in the independent claims, and especially does not show: a pulse combustion device or a turbofan engine comprising means for maintaining the rotation of the combustor carousel by: a spool driven by the turbine or direction of the combustion products (in a partially tangential direction).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### **EXAMINER'S AMENDMENT**

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

#### **Claims**

The claims will be renumbered in the issued patent as follows.

Claims 1-14 remain the same

Claims 16-28 will be renumbered as claims 15-27 respectively in the issued patent.

#### ***Contact information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Rodriguez whose telephone number is 571-272-4831. The examiner can normally be reached on Monday-Friday 7:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy S. Thorpe can be reached on 571-272-4444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
William H. Rodriguez

Examiner

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5/13/05